

# THE KEY TO SAFE SLEEPING PRACTICE

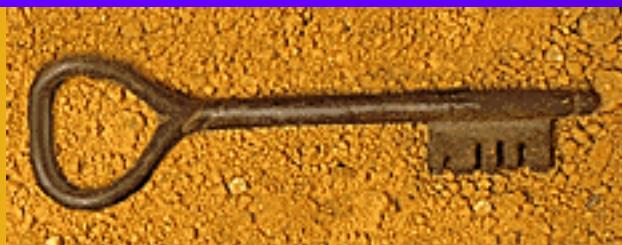
Presented by:

Marjorie L. Hershberger, MS, RN, CPNP  
Child Death, Near Death, Stillbirth  
Commission



# What is happening in Delaware

- ◆ At the May 2006 Joint CPAC/CDNDSC meeting a community action team was charged with the following mission:
  - *To evaluate programs, task forces and educational awareness campaigns around safe sleeping practices education in Delaware and make a recommendation for creation, improvement or merging of initiatives to address the current number of SIDS deaths with sleeping practices factors.*

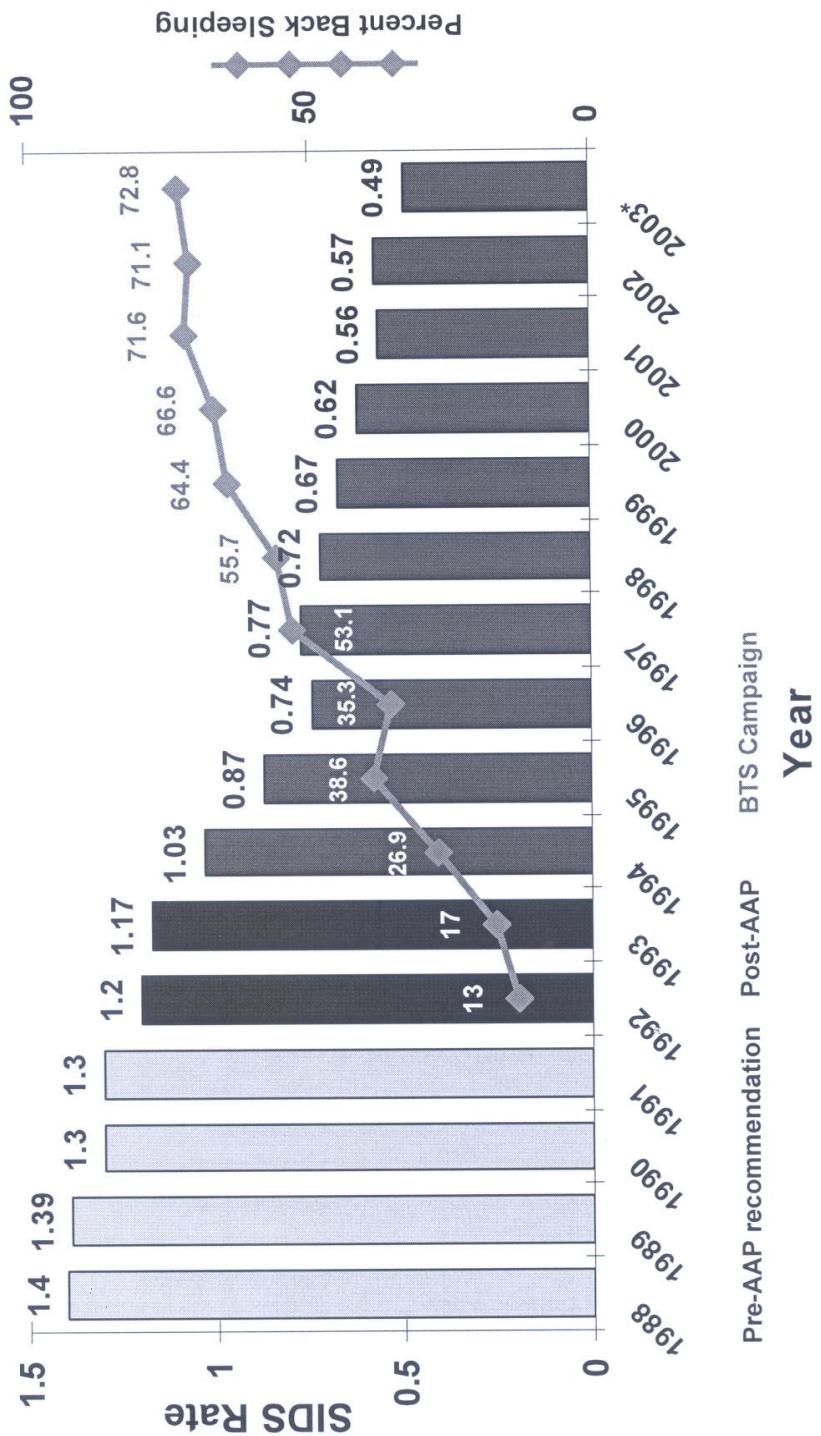


# Objectives

- ◆ Define SIDS including: Etiology, risk factors, and epidemiology.
- ◆ Identify unsafe sleep practices.
- ◆ Discuss Delaware statistics for SIDS vs Sleep related deaths.
- ◆ List the risk reduction message for parents and caregivers.
- ◆ Identify various resources for safe sleep practice information.



## SIDS Rate and Sleep Position, 1988-2003 (Deaths per 1,000 Live Births)



\*Preliminary Data  
Sleep Position Source: NICHD Household Survey  
SIDS Rate Source: National Center for Health Statistics, CDC

# Sudden Infant Death Syndrome

## SIDS

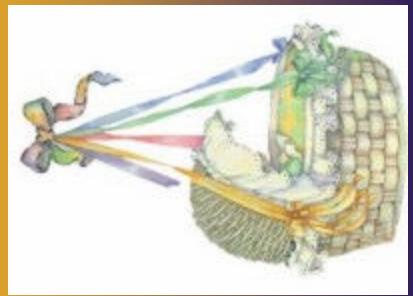
- ◆ Definition:

- “The sudden death of an infant less than one-year of age which remains unexplained after a thorough case investigation including the performance of a complete autopsy, examination of the death scene and review of the clinical history.”



# Cause Of SIDS?

SIDS is a multi-factorial disease in which autonomic control of breathing and cardiac function is inadvertently disrupted by a series of clinical conditions which occur simultaneously in a susceptible child.



# Sudden, Unexplained Infant Death Initiative (SUNDI)

- ◆ Is the decline in SIDS rate accurate?
  - Deaths previously classified as SIDS are now classified as:
    - Accidental suffocation
    - Unknown/unspecified cause
- *This finding suggests changes in reporting may account for part of the decrease in SIDS rates.*



# Cause of Death and Our National Statistics

Cot Death	Crib Death	Sudden Death in Infancy	Sudden Infant Death	Sudden Infant Death Syn.	Sudden+(un- expected) or (unattended) or (unexplained)	Death+( (cause unknown) or (in infancy) or (syndrome))
Sudden Unexplained Death	Sudden Unexplained (Unexpected) Death in Infancy				Probable SIDS	Consistent with SIDS
Infant death + (syndrome)						



# Sudden Unexplained Infant Death Investigation Reporting Form

- ◆ CDC collecting standardized information with the goals as follows:
  - Monitor trends in SUID at the state, regional and local level.
  - Identify new risk factors associated with SIDs and other SUID.
  - Develop and evaluate strategies and interventions to prevent SUID.
  - Assist in identifying cases for research studies.

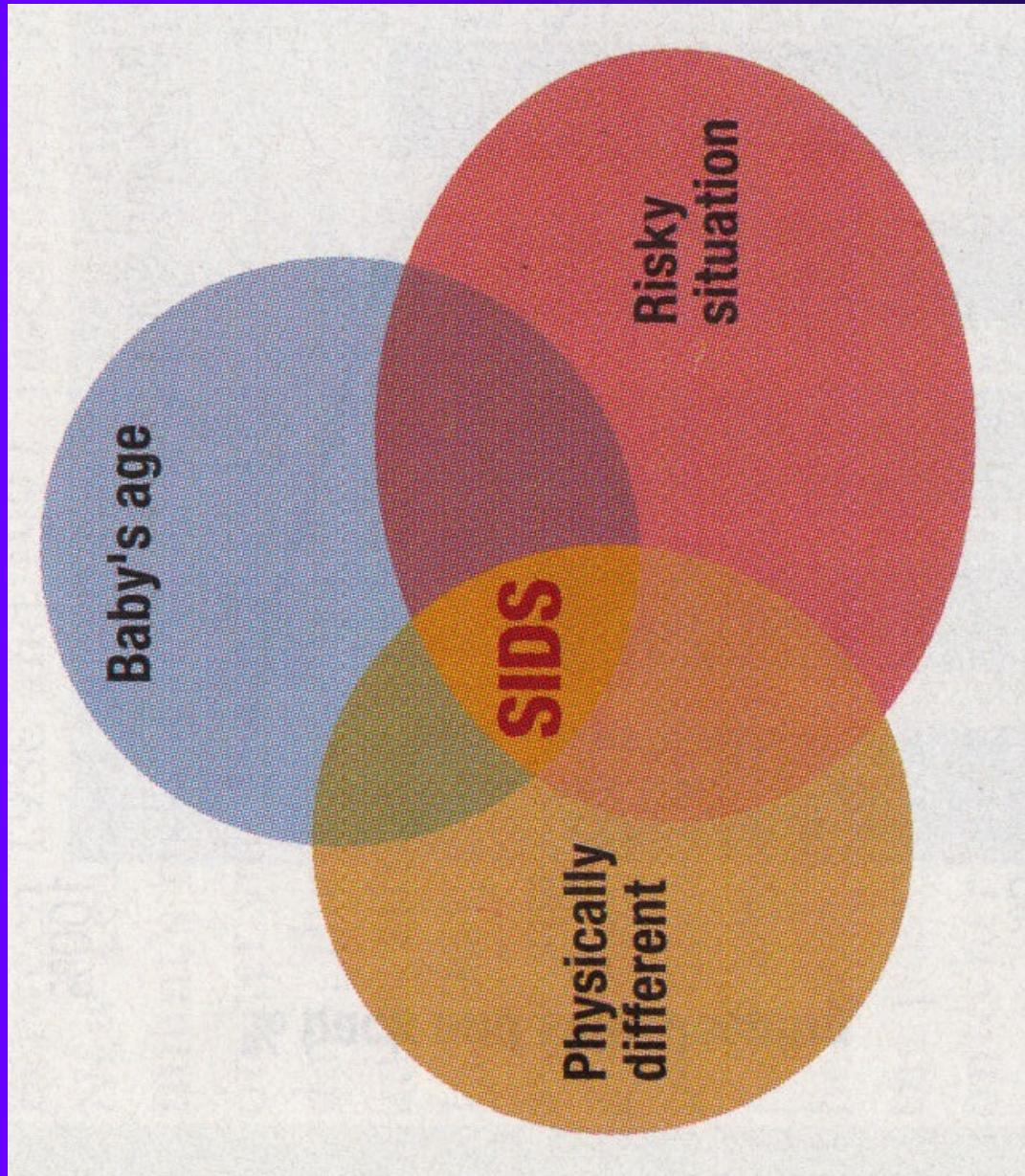


# Sudden Infant Death Syndrome

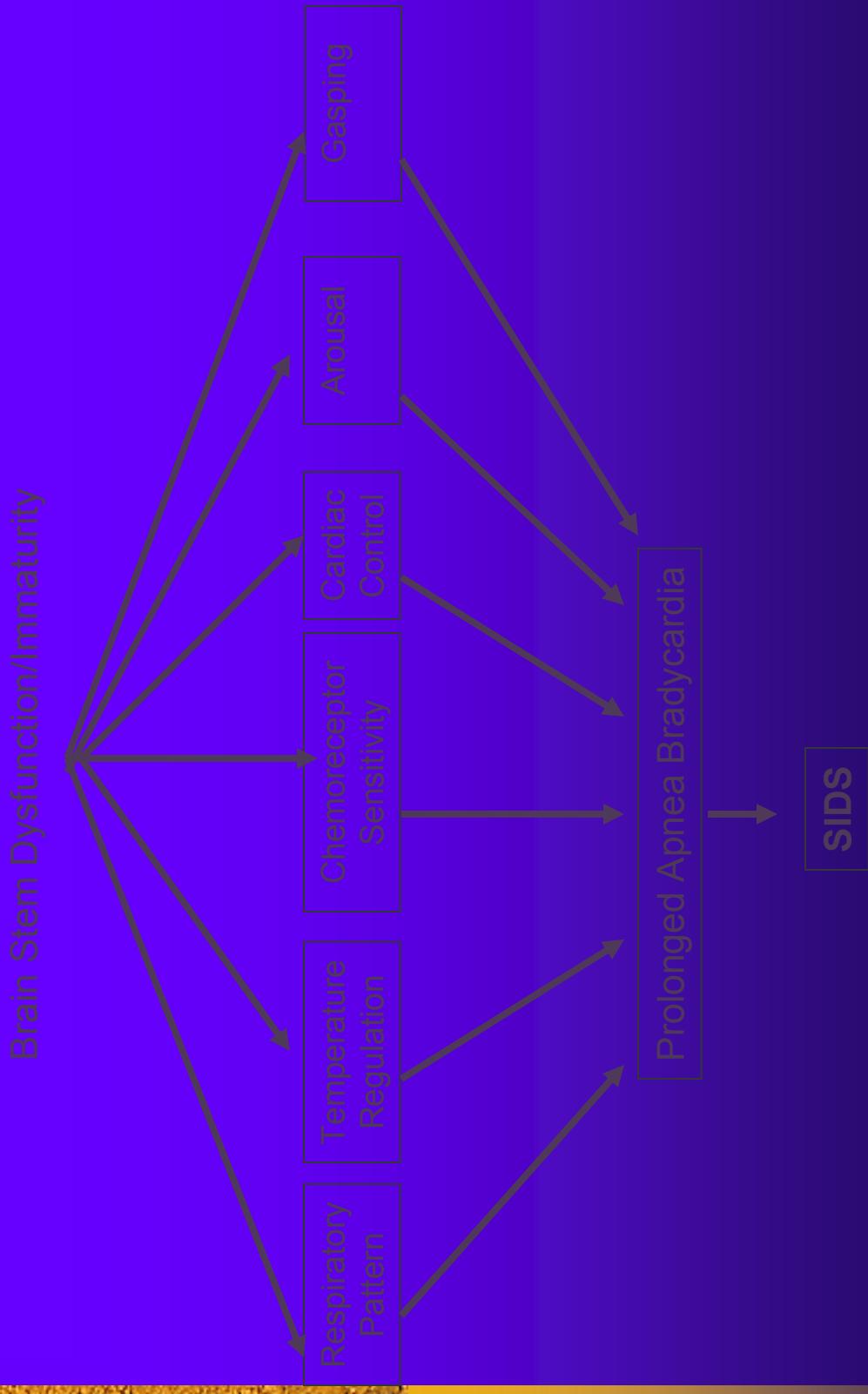
- ♦ Unexpected by history
- ♦ Unexplained by autopsy
- ♦ Cause(s) unknown
- ♦ No prospective identification
- ♦ No established intervention
- ♦ SIDS is a diagnosis of exclusion



# The Triple Risk Model



## CARDIRESPIRATORY CONTROL HYPOTHESIS FOR SIDS



# Some Characteristics of SIDS:

- ◆ **Age:**

By Age:	% of all SIDS:
1 month	5%
3 months	60%
6 months	90%
- ◆ Most common between 2–4 months of life
- ◆ The winter peak of SIDS is lessening

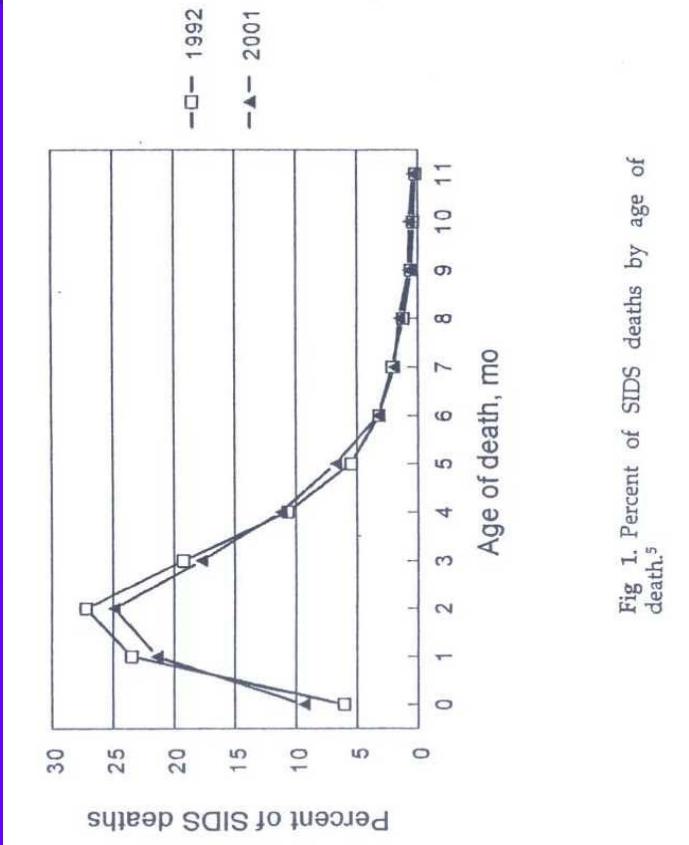
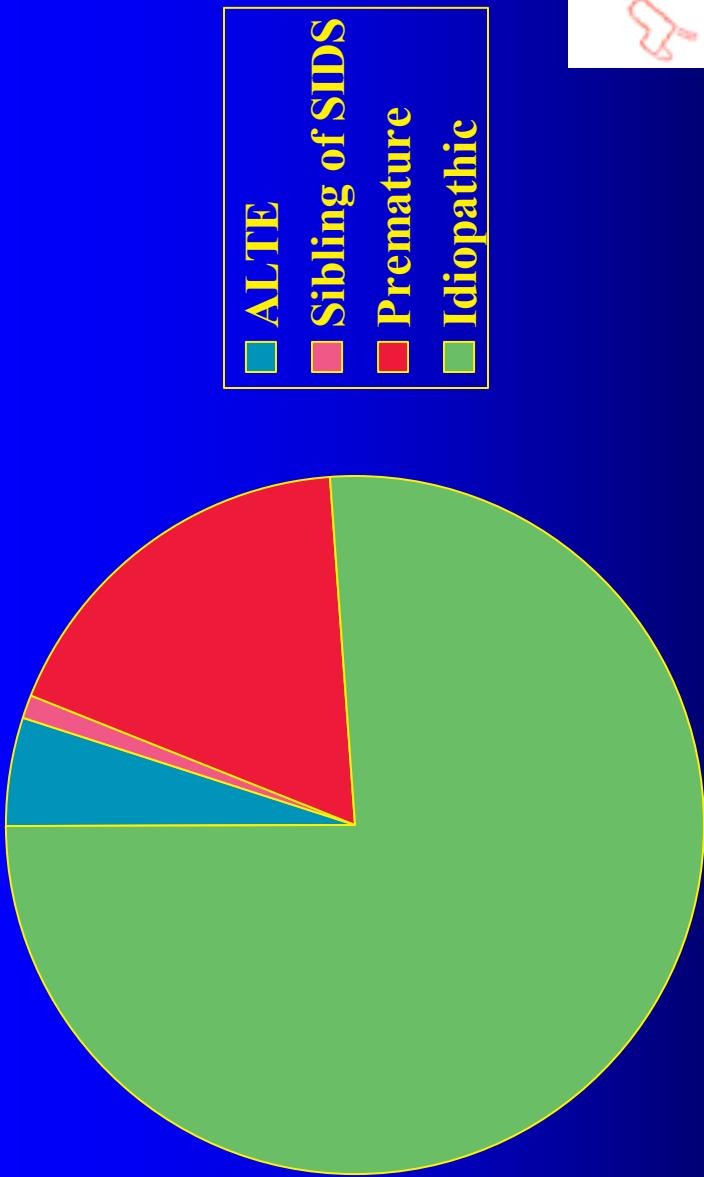


Fig 1. Percent of SIDS deaths by age of death.<sup>5</sup>



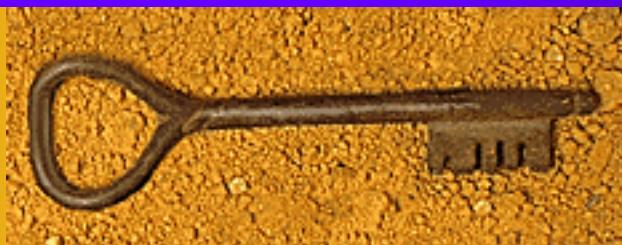
PEDIATRICS:116(5), 2005

# HIGH RISK GROUPS:



# Sociodemographic factors

- ◆ Lower socioeconomic status
- ◆ Younger maternal age
- ◆ Lower maternal education
- ◆ Single marital status
  - American Indian and non-Hispanic black are two to three time more likely to die of SIDS
  - Recent trends indicate that social and racial disparities are increasing



# Risk Factors

- ◆ Birth Factors:

- Low birth weight
  - Prematurity
  - IUGR
- Multiple birth
- Male infants
  - 40-50% more likely to succumb to SIDS



# Risk Factors

- ◆ Pre-natal/Maternal factors:

- Intrauterine hypoxia
- Fetal growth retardation
- Poor prenatal care
- Poor maternal weight gain
- Tobacco abuse
- Substance abuse
- Anemia
- Less than 18 months between births



# Postnatal Risk Factors

- ◆ Growth failure
- ◆ Perinatal Asphyxia
- ◆ Prematurity and low birth weight
- ◆ Male gender
- ◆ Post natal age of 2-4 months
- ◆ Co-sleeping
- ◆ Recent illness (febrile)
- ◆ Passive smoke
- ◆ Prone sleep position
- ◆ Ethnicity (black or Native-American)
- ◆ Bottle feeding
- ◆ Thermal stress(overheating)

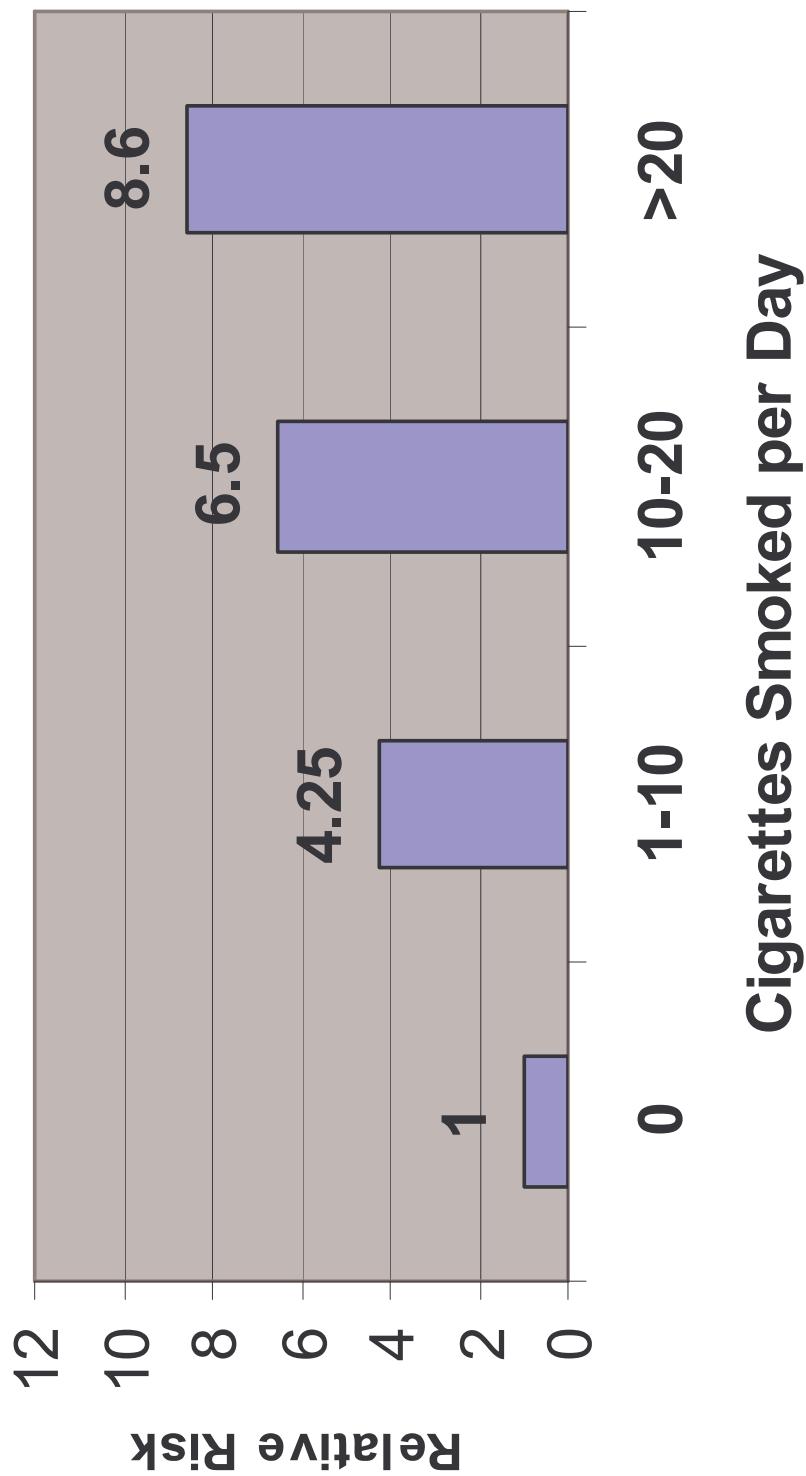


# Tobacco Exposure

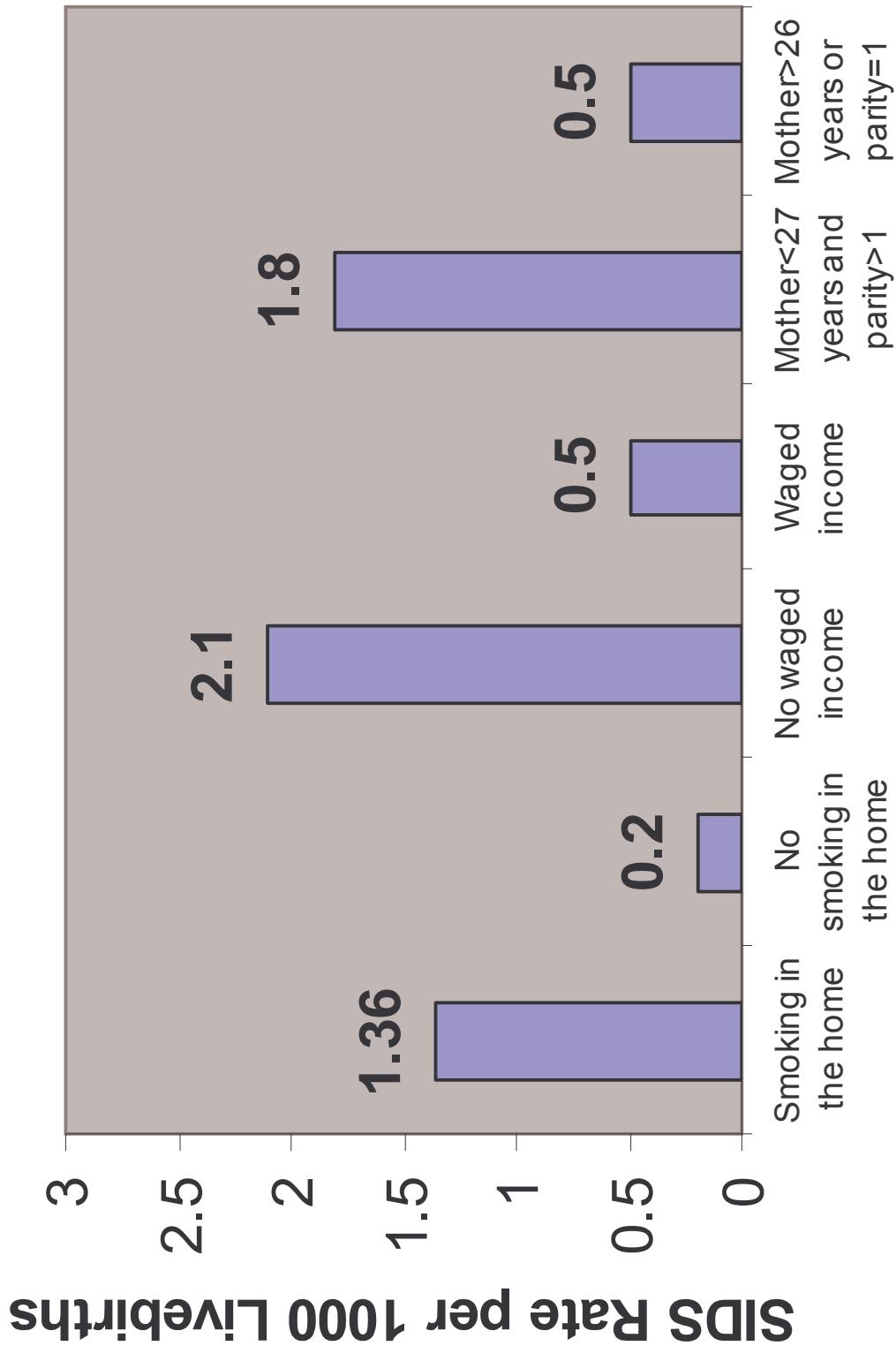
- ◆ In 2001 the SIDS death rate had declined by 40%, approximately 3,000 deaths/year.
- ◆ Prevalence of cigarette smoking during pregnancy declined app. 25%.
  - Nicotine may blunt the response to hypoxia
    - Role of nicotine and carbon monoxide. Hypoxia or stress due to utero-placental insufficiency.
  - The effect is dose dependent. The more the infant is exposed to smoke, the higher the risk.
  - Affects on arousal response.
  - Affects on cardio respiratory control.



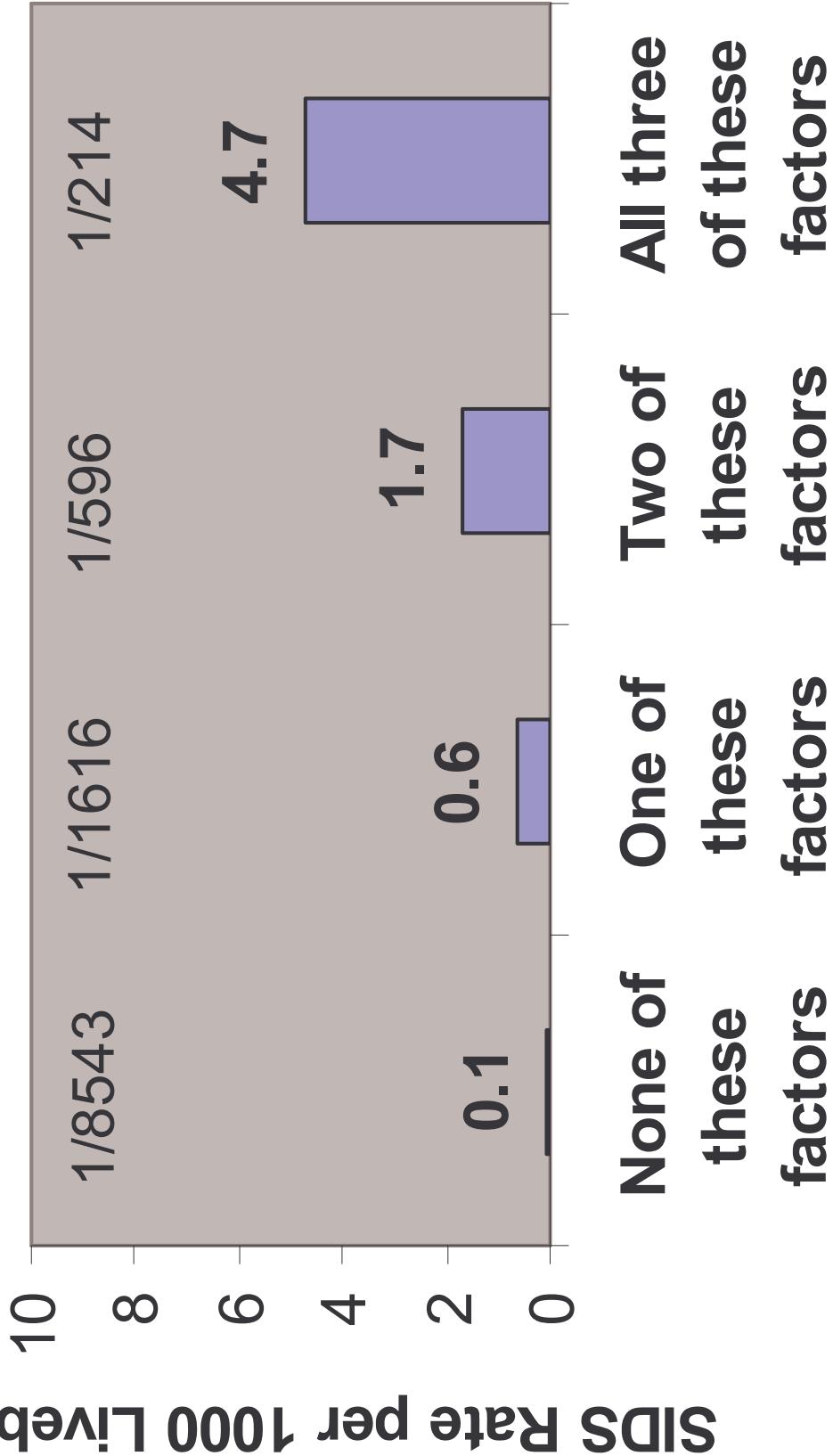
# Risk of SIDS Associated with Maternal Smoking During Pregnancy in the CESDI SUDI Studies



# SIDS Rates for Risk Factors from the CESDI SUDI Study



# SIDS Rates Based on Risk Factors in the CESDI SUDI Study



# Some Percentage of SIDS is Infanticide:

- ◆ Egregious examples exist:
  - Multiple deaths among siblings
  - Munchausen Syndrome by Proxy:
  - Studies using covert video surveillance:
    - Southall, DP et al:  
PEDIATRICS:100(5), 1997
- ◆ Forensic issues are **extremely important**:
  - Timely and sensitive death scene investigation:
  - Pediatric post-mortem examination

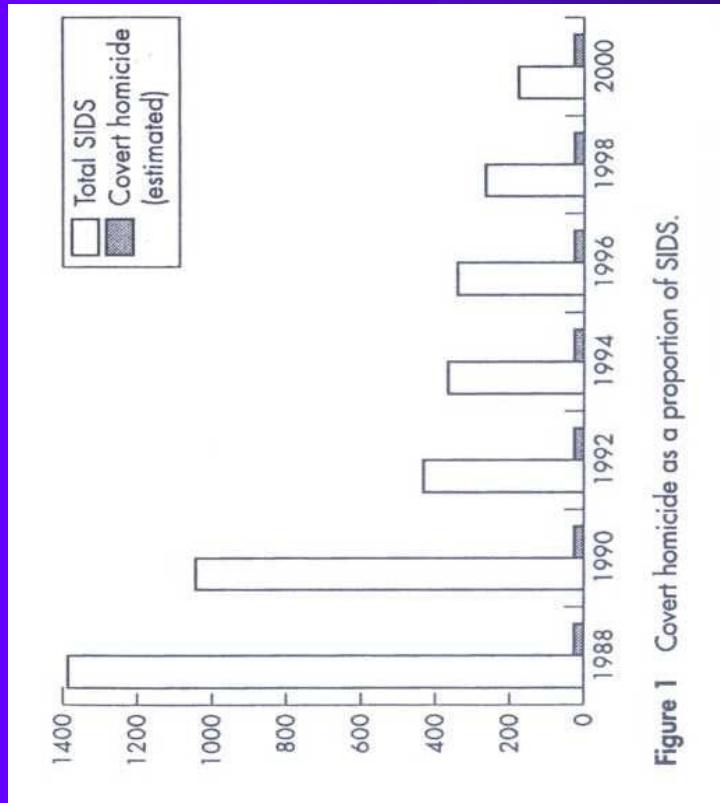


Figure 1 Covert homicide as a proportion of SIDS.

Levene, S et al. Arch Dis Child 2004;89:443-7

# Delaware Infant Mortality from 2000-2004

Cause of Infant Death in Counties	New Castle, DE	Sussex, DE
SIDS	27 75.00%	8 72.73%
III-Defined	4 11.11%	3 27.27%
Threat to breathing	5 13.89%	0 0.00%



# Delaware Statistics

- ◆ From 2003 to 2007:

- SIDDS: 18

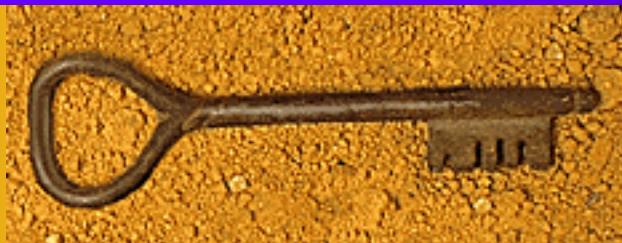
*However:*

- Number of sleep related deaths from 2003 to 2007: 57
    - Third leading cause of death (same as National statistics)
    - Number of Males: 29 Number of Females: 28
    - Most common age at time of death: 0 to 1 month: 22
      - 2 to 3 months: 20
    - Race: AA: 31 (54%); White: 23 (40%)



# Unsafe Sleep Practices

- ◆ Most Common Factors involved in Delaware deaths:
  - Not in a crib or bassinette = 37 (32%)
  - Sleeping with other people = 29 (25%)
  - Not sleeping on back = 26 (23%)
  - Unsafe bedding or toys = 16 (14%)
  - Obese adult with infant = (3%)
  - Adult with alcohol impairment = (1%)
  - Adult with drug impairment = (2%)



# Sleep practices and Sleep environment

- ◆ Primary Care Providers
  - Of 783 Pediatricians surveyed 78% identified supine as the recommended sleep position.
  - 42% recommend a separate room
  - 26% recommend limited use of pacifiers
- ◆ Both pediatricians and family practice physicians were less likely to discuss bed sharing, room sharing and pacifier use than to address sleep position.



# Sleep Practices and Sleep Environment

- ◆ Survey by CPSC and Gerber Products Co.
  - “Most families still place their babies to sleep in ways that increase the risk of SIDS”.
  - Unsafe practices included:
    - Prone or side position
    - Soft bedding
    - African-American are more likely to have infants in situations that increase their risk of SIDS
    - 39% of AA parents got their information about sleep position from grandparents



# Barriers to Back to Sleep

- ♦ Regurgitation/aspiration concerns
- ♦ Deep sleep
- ♦ Plagiocephaly
- ♦ Contrary advice from a relative or caregiver



# Barriers to “Back to Sleep”

- ◆ Study done by Colson, et al (2005) looked at African American caregivers in the inner city. Found 4 themes related to barriers:
  - Safety: fear of choking
  - Advice: More experience female family members
  - Comfort: Perception of whether the infant looked comfortable
  - Knowledge: limited or erroneous knowledge



# Bed Sharing and Infant Death

- ♦ Fact: Half of the infants in the US who die from Sudden Unexpected Death do so while sleeping with their parents.
  - US experience with bed sharing and infant death is very different from other cultures.
  - Cultures where babies routinely sleep with their parents do so on firm mats on the floor, have separate mats for the infant and/or the absence of soft bedding.



# Bed Sharing

- ◆ SIDS victims were 5.4 time more likely to share a bed with other children.
- ◆ Infants < 8 months, risk of death while in a crib: .63deaths/100,000 infants.
- ◆ Infants < 8 months, risk of death while in a adult bed: 25.5 deaths/100,000 infants.
- ◆ Risk for SIDS:
  - Greatest if sharing a sleep surface
  - Intermediate if sleeping in another room
  - Least if infant sleeps in same room without bedsharing
    - Scheers, Rutherford, & Kemp: Pediatrics 2003



# Sleep Practices and Risk for Sudden Death

- ♦ < 1 year of age infants are particularly vulnerable to accidental suffocation because they lack the mobility or strength to remove themselves from a dangerous situation.
- ♦ 11 Coroners covering communities in Michigan, Florida, Minn., MO. WIS.
  - 72% of 354 infant fatalities were accidental suffocations.
- ♦ Philadelphia reported in 2004 that 2/3 of the 71 unexpected infant deaths over 18 months were infants who were sharing a bed or other sleep surface with someone else
- ♦ Baltimore from 2002 –2006 reported 81 of the 89 unexpected deaths were in unsafe sleeping conditions.  $\frac{3}{4}$  were co-sleeping.
- ♦ Delaware from 2003 to 2007 risk factors most prevalent: not in crib, sleeping with other people and not sleeping on back.



# Suffocation in United States

- ◆ In 2000 there were 1,580 suffocations, including 842 unintentional deaths. (*National MCH Center for Child Death Review*)
- ◆ Most unintentional suffocations are caused by:
  - **Overlay:** a person who is sleeping with a child rolls onto the child and unintentionally smother the child
  - **Positional Asphyxia:** a child's face becomes trapped in soft bedding or wedged in a small space such as between a mattress and a wall or between couch cushions
  - **Covering of face or chest:** an object covers a child's face or compresses the chest such as plastic bags, heavy blankets or furniture.



# Soft Bedding:

- ♦ Inappropriate bedding:
  - Pillows/Comforters
  - Soft mattresses
  - Bean bags
  - Sheepskins

Condition      Odds Ratio

Pillow	2.5
Soft bedding	5.1

**Risk of prone position  
is synergistic with  
soft bedding**

# How an Infant SHOULD NOT be Sleeping:



Kemp, JS et al. PEDIATRICS:106(3), 2000

PEDIATRICS®



# Unintentional Suffocations Continued

- ♦ **Choking:** a child chokes on an object such as a piece of food or small toy.
- ♦ **Confinement:** a child is trapped in an airtight place such as an unused refrigerator or toy chest.
- ♦ **Strangulation:** a rope, cords, hands or other objects strangle a child
- ♦ A large number of suffocation deaths are still reported as manner undetermined.
  - (*National MCH Center for Child Death Review*)



# Unsafe Sleep Practices

- ♦ Philadelphia in 2004: 2/3 of the 71 unexpected deaths over a 18 month period were infants co-sleeping
- ♦ Baltimore from 2002 to 2006: 81 of the city's 89 unexpected infant deaths occurred in unsafe sleeping conditions
- ♦ Delaware 2003 to 2007: 51 out of 57 infant sleep-related deaths were in unsafe sleeping conditions.
  - Most prevalent risk factors: not in a crib, sleeping with other people and prone sleeping.



# Prevention: How Can We Make a Difference?

- ♦ Get the Word out!!!

- Despite significant declines in SIDS rates, SIDS remains the leading cause of death for infants 1 month – 1 year.
- Greater efforts must be made to communicate and encourage safe sleep practices
- Follow ALL the AAP safe sleep recommendations!



# AAP Safe Sleep Recommendations

- ◆ Back to sleep for all sleep
- ◆ Use of crib and firm, fitted mattress with a fitted sheet.
- ◆ No soft or loose bedding or objects
- ◆ Smoke free environment
- ◆ No co-sleeping. Room sharing
- ◆ Use of pacifier for sleep
- ◆ No overheating
- ◆ Avoid products that claim to reduce SIDS
- ◆ Do not use home monitors
- ◆ Provide supervised Tummy Time



# Safe Sleeping

- ◆ Primary Care Providers are in a unique position to get the message to parents and caregivers.
- ◆ Know what Resources are available, there are a lot!
- ◆ Cultural Challenges must be acknowledged
- ◆ Know the correct information to respond to parental concern. Communication is key!



# SAFE INFANT SLEEP

## PRACTICES:

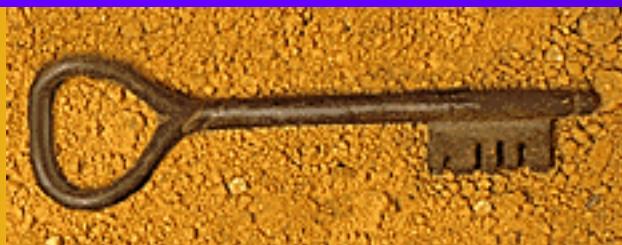


- ◆ “Back to Sleep”
- ◆ Safe Crib:
  - Designed for infants
  - ◆ “Feet to Foot”
  - ◆ No Smoking
  - ◆ No soft bedding
  - ◆ Comfortable temperature
  - ◆ Rooming in for first 6 months
  - ◆ Use of Pacifier after 1 month of age
  - ◆ Devices to keep babies on their back are not recommended



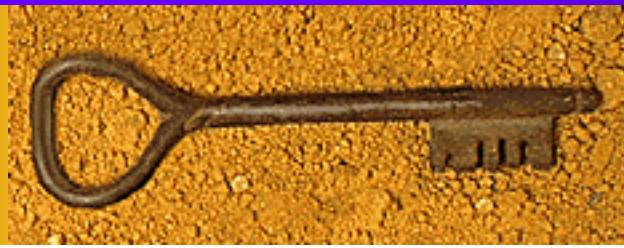
# What is happening in Delaware

- ◆ At the May 2006 Joint CPAC/CDNDSC meeting a community action team was charged with the following mission:
  - *To evaluate programs, task forces and educational awareness campaigns around safe sleeping practices education in Delaware and make a recommendation for creation, improvement or merging of initiatives to address the current number of SIDS deaths with sleeping practices factors.*



# Safe Sleeping Community Action Team Recommendations

- ◆ *The Office of Child Care Licensing and the Division of Family Services should continue to include the most updated information available on safe sleeping practices as part of the Department's core curriculum for foster care training and childcare providers.*
- ◆ *The Child Death, Near Death, and Stillbirth Commission, the Delaware SIDS Coordinator, and the Delaware SIDS Affiliate, should jointly develop a Safe Sleeping Practices website or link under the CDNDSC website. This website should include a preventive message as well as links to other state and national organizations that promote the health and well-being of infants.*



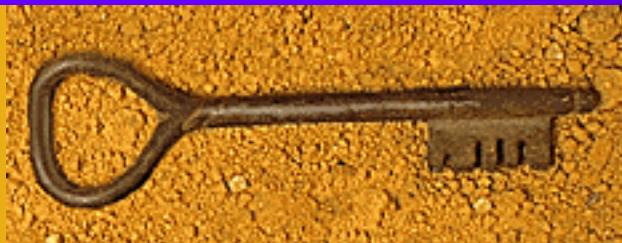
# Safe Sleeping Community Action Team Recommendations (Continued)

- ♦ *The Joint Commissions should identify an organization/program to develop and coordinate a statewide hospital education campaign on safe sleeping practices. This campaign should include guidelines for safe sleeping practices for use by pediatric healthcare providers.*
- ♦ *The CDNCS legislative subcommittee should research state SIDS/Safe Sleeping Practices legislation and, if necessary, report to the CDNDS by April 2007 or earlier with proposed legislation to be implemented in Delaware.*



# In Summary

- ♦ While Back to Sleep is essential, don't forget the sleep environment!
  - Select a crib that conforms to the Consumer Safety Commission recommendations.
  - Select a firm, snug-fitting mattress.
  - Create a smoke free zone for a pregnant woman and baby
  - No bed sharing but room sharing
  - Avoid overheating
  - Never put a baby to sleep on a waterbed, sofa, soft mattress, pillow, or other soft surface.
  - Devices to keep babies on their back are NOT recommended.
  - Keep all well-baby and prenatal appointments.
  - Consider use of pacifier



# Resources

- ◆ First Candle
- ◆ Back to Sleep Campaign
- ◆ US Department of Health and Human Services/NICHD
- ◆ National MCH Center for Child Death Review
- ◆ Cribs for Kids
- ◆ Sweet Dreams: Safe Sleep for Babies
- ◆ SIDS Network
- ◆ AAP Task Force on Sudden Infant Death Syndrome
- ◆ CJ Foundation for SIDS
- ◆ Safe Kids Worldwide
- ◆ National SIDS/Infant Death Resource Center
- ◆ National Safe Kids Campaign
- ◆ Delaware SIDS Affiliate
- ◆ Compassionate Friends



# Conclusion

“These children are lost to us; they are irreplaceable. Let us learn what we can from their untimely, often tragic deaths and work to benefit future children”

(Saskatchewan child advocate)

